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ABSTRACT

Examined are the steps involved in developing a curriculum for young deaf children with specific learning disabilities; the curriculum is thought to reflect an educational and remedial model based upon findings in previous studies in perceptual, cognitive, and educational psychology. The earlier studies are summarized briefly to explain the history and foundation for the CREED 5 Curriculum. The primary goal of the overall project is stated to be development of cognitive processes in the child; the curriculum content is described as perceptual and cognitive. At each developmental level, the curriculum was subjected to evaluation by teachers and supervisors from 12 schools for the deaf in New York State. The curriculum focuses on five instructional areas of gross motor coordination, sensory motor integration, visual analysis, attention and memory, and conceptualization. Implementation of the curriculum, viewed as comprehensive and developmental, is based on paraprofessional involvement, continual program evaluation, and individualized instruction. Involvement of a representative group of supervisors and teachers in a series of ongoing seminars as part of the curriculum development was reviewed to highlight teacher role in each stage of the curriculum development. (See also ED 046 167 for Phase I: for related documents see also EC 041 647, 648, and 650.) (CB)

ED 060604

CURRICULUM DEVELOPMENT FOR YOUNG DEAF CHILDREN WITH SPECIFIC LEARNING DISABILITIES: PHASE 2

PROJECT CREED 5

(Cooperative Research Endeavors in Education of the Deaf)

E.S.E.A. Title I — P.L. 89-313

Lillian C. R. Restaino, Ph.D., Principal Investigator

EC 041 648

BUREAU FOR HANDICAPPED CHILDREN
THE STATE EDUCATION DEPARTMENT
ALBANY, NEW YORK 12224

1971

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CURRICULUM DEVELOPMENT FOR YOUNG DEAF CHILDREN WITH SPECIFIC LEARNING DISABILITIES: PHASE II
(Ages 4 - 8 in New York State)

Lillian C. R. Restaino, Ph.D., Principal Investigator

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PROJECT CREED 5

September 1970 - August 1971

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PREFACE

Almost five years have passed since the first steps were taken to initiate a cooperative project among state-supported schools for deaf children in New York State. The objective of that first effort was "to identify deaf children with special problems in communication and to indicate courses of action needed in curriculum planning and staff training areas." Having met this objective at an early stage, school and project staff - with the support of the Bureau for Physically Handicapped Children - began to work on the creation of a curriculum that would reflect an educational-remedial model based upon current findings in perceptual, cognitive and educational psychology. This Final Report relates our combined experience in the drafting and implementation of the curriculum during the past year.

Several teaching-learning problems - common to both general and special educators in the state and country - were met along the way. They were not corrected, of course, but attempts were made to suggest ways and means of ameliorating them for both pupils and educating staff. These will be delimited in another summary volume.

One clear outcome has been voiced repeatedly by classroom personnel and curriculum developers: teacher recognition of the wide range of abilities and disabilities, uncovered in the process of studying and teaching the young handicapped deaf child, must result in an instructional program as close to individualized, prescriptive teaching as can be reached outside a clinical setting. All who have been involved in the various stages of this first CREED project trust that the new curriculum will contribute in a large way to the foundations of that program.

Frances Cronin

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CREED 5 Project

Chapter I

A. Foundations

The CREED projects, 1966-1971, have been devoted to the improvement of instruction of the young deaf child with learning disabilities. In the early phases of the CREED projects, the disability areas of the target population were contrasted with those of the larger deaf school population (CREED 3, 1969). Using information based on this study, the CREED 4 Staff designed processes of remediation specific to the clusters of disabilities found in the young deaf child with special learning problems. During this 1969-1970 CREED 4 project year, those teachers and supervisors who participated in the remediation program expressed a critical need for a complete instructional program for their children. They strongly urged that a curriculum be designed which would be appropriate to their objectives for the young deaf child with special learning disabilities.

The CREED 5 project is the response to the expression of this need. While each of the CREED projects is a discrete entity in and of itself, the direction for all of the phases of the ongoing projects has come from certain basic principles of human development and learning. Of these principles, that considered the most critical to the construction of the curriculum is that, given appropriate environmental opportunities, all human beings progress through developmental processes in essentially similar ways. Because we believe that the sequence of development as described by Piaget and his students is far more productive for the school learning situation than any other description extant, the staff of the ongoing CREED project has based its work upon Piagetean principles of cognitive development. The needs of our children demand, in addition, precisely articulated principles of attention and memory; we have relied for direction in this area on the work of contemporary perceptual psychologists such as Gibson (1969) and Kintsch (1970).

Thus, the principles from preceding CREED projects provided foundation for the Curriculum developed in CREED 5; developmental and perceptual psychology provided the basis for the

content of the curriculum, and learning theory provided the basis for the structure of the curriculum. In our design we hoped to provide appropriate experiences in the classroom for perceptual-cognitive development; we decided that the theories of Benjamin Bloom (1971) and Robert Gagné (1970) would be most useful for these purposes. Our attempt at ordering objectives and activities along increasing levels of difficulty is directly related to the systems developed by these and other psychologists in the area of the sequential development of behavioral objectives.

The implementation of aspects from both Piagetean theory and learning theorists in the curriculum may appear a strange combination; indeed, Lee Shulman describes a basic contradiction between the "camps":

"The latter point reflects Piaget's influence on some current conceptions of readiness. To determine whether a child is ready to learn a particular concept or principle, one analyses the structure of that to be taught and compares it with what is already known about the cognitive structure of the child of that age. If the two structures are consonant, the new concept or principle can be taught; if they are dissonant, it cannot. One must then, if the dissonance is substantial, wait for further maturation to take place. If the degree of dissonance is minimal, there is nothing in Piaget's general theory to preclude the introduction of training procedures to achieve the desired state of readiness. However, Piaget seems to prefer the "waiting" to the "training" strategy under such conditions. Though his theory admits of both external and internal sources of developmental change, he seems to favor internal ontogenetic mechanisms." (Shulman, 1970a; p. 43-44)

It has been our experience, however, that these two sources are not incompatible. Describing a sequence of development in terms of the expected behavior of the child need not require that one adhere to the tenets of behavior theory. It is quite possible to use the structure of ordered, sequential objectives, with a program based upon the principles of environmental transaction, such as those of Piaget. Indeed, Kamii, who has developed an exciting preschool curriculum in Ypsilanti, Michigan, describes the structure in terms of ordered objectives. In explication of this structure, she states:

"From Piaget's descriptive theory, some people draw the implication that development is a process of 'unfolding' and that all the teacher can do is wait for this unfolding to take place. At the opposite extreme, others feel that whatever Piaget says a 4-year-old cannot do can be taught with explanations, repetitions, suggesting, and even operant conditioning. The Piaget-based pre-school curriculum in Ypsilanti, Michigan, works on the belief that the child should be helped to construct certain pre-requisite abilities, but these abilities should not be imposed by the teacher." Thus, Kamii's program provides precise objectives for the teacher, but the method for presenting them is not the teacher-directed input of a Bereiter-Englemann curriculum. The environment is organized so that the child, with teacher facilitation, moves through the activities toward mastery at each level.

Similarly, the CREED 5 Curriculum was designed with the expectation that each teacher would observe each child carefully and intensively, and then would select those objectives and activities appropriate to his level of development. It is our hope that the teacher will use the CREED 5 Curriculum in the manner in which J. McVicker Hunt has recommended:

"If encountering a given set of circumstances is to induce psychological development in the child, these circumstances must have an appropriate relationship to the information already accumulated in the child's mental storage from his previous encounters with circumstances. The problem of presenting particular children with circumstances which will foster their particular development is no easy matter. On the cognitive side, the circumstances presented must be relevant to the information accrued among the child's central brain processes from circumstances encountered in the past. Ordinarily, the best indicators of an appropriate match are to be found, as I now believe, in emotional behavior. These indicators are evidences of interest and mild surprise. If the circumstances are too simple and too familiar, the child will fail to develop and he is likely to withdraw in boredom. If the circumstances presented demand too much of a child, he will withdraw in fear or explode in anger." (Hunt, 1969, p. 129)

Throughout the ongoing CREED project, our primary goal has been the development of cognitive processes in the child; the content of the CREED 5 Curriculum is, indeed, perceptual-cognitive. We have always been aware, however, of the

affective needs of our children. We selected the structure of our Curriculum precisely for the purpose of providing children who have failed over and over again with opportunities for success. Our decision to design sequences of behavioral objectives along increasing levels of difficulty was dictated not by current fashion, but by the recognition of the need to provide for the motivation of the children served by the CREED 5 Curriculm, as well as for their perceptual-cognitive development. The sequences are designed so that they begin with very simple objectives and activities, and progress slowly to more difficult levels. The teacher can select a level at which she knows the child will succeed, and work with him through the sequence of objectives. In addition, an attempt has been made to provide several activities for the fulfillment of each objective, so that the child will be given the opportunity to work at different tasks in mastering an objective. In other words, we have attempted to motivate the child through designing a structure that will provide him with opportunities to demonstrate competence. We agree with Hunt (1969) and Gordon (1969) that competence in performance is a strong force for self-motivation and positive affect. Unfortunately, we know that the corollary is true, viz., that failure in performance is a strong force for the child to avoid further attempts. Thus, while we have designed no objectives or activities specific to the encouragement of achievement motivation, we believe that the hierarchy of objectives and the variation of activities for the mastery of each objective should provide the teacher with numerous opportunities for building a positive image of competence in her children.

We view the CREED 5 Curriculum, then, as a resource for the teacher, from which she selects objectives and activities for her children, considering their current level of development, her aims for their future progress, and the kinds of experiences that are appropriate for fulfillment of these aims. In addition, it is a valuable source for the encouragement of a positive self-concept through the development of perceptual-cognitive skills.

B. The CREED 5 Curriculum Pilot Trial

Unfortunately, a sound foundation in educational and developmental psychology alone does not insure the success of a curriculum. Psychologists involved in curriculum design very often forget that the success of the end product is a direct function of the nature of the teacher's

involvement in it. Thus, a curriculum must be designed with both a psychologically sound and an educationally practicable structure. Toward this end the CREED 5 Curriculum was subjected at all stages of its development to evaluation by teachers and supervisors from twelve schools for the deaf in New York State. While the CREED 5 Staff designed the objectives, bi-monthly seminars of teachers and supervisors were held for the evaluation and modification of these objectives. When activities for the mastery of the revised objectives were being designed, the seminar participants were encouraged to provide appropriate activities from their classroom experience. When the first draft of the curriculum was completed, fifty-five teachers in ten schools for the deaf subjected different parts of it to trial and evaluation in their classrooms. They discussed together in the seminars their experiences with specific aspects of the curriculum. Two members of the CREED 5 Staff were responsible for the leadership of these seminars; they met periodically with the CREED curriculum staff to report upon the comments, recommendations and decisions of the seminar participants. A full report of the seminars is presented in Chapter II.

In addition, ratings at various points in the sequence of development of the Curriculum were requested from participating teachers and supervisors. As we indicated in the CREED 4 Project Report (1970), we believe that important information for the modification of a curriculum may be obtained from subjective and objective sources, i.e., from both seminar discussions and objective ratings. The Rating Schedule included variables considered to be of singular importance to the successful implementation of the Curriculum in the future. Figure 1 in Appendix A presents a sample of the Schedule used in rating all the General Objectives in each of the five instructional areas, and the General Assumptions and Objectives in the initial section.

Tables 1 through 6 in Appendix A report the results of the tabulation of these rating schedules. It is apparent that, in general, the teachers and supervisors strongly approved the first draft of the objectives. In addition, an important finding was the dissatisfaction expressed by teachers with the facilities currently available to them for fulfilling important educational objectives.

These ratings were studied carefully by all members of the CREED Staff, and where changes were indicated, changes were made. For example, in Table 2 it is apparent that Objective 3 was not clear to a number of the participants;

C. The CREED 5 Curriculum

The CREED 5 Curriculum is divided into six parts -- an initial section covering General Assumptions and Objectives, and a separate section for each of five instructional areas -- Gross-Motor Coordination, Sensory-Motor Integration, Visual Analysis, Attention and Memory and Conceptualization. The format for the initial section is designed to present Assumptions and Objectives in terms of expectations for teacher behavior. The format for the five instructional areas consists of a number of broad objectives, and their subordinate specific objectives, all in terms of the child's behavior. Activities and materials for helping the child to master these objectives are included under each subordinate specific objective.

It is doubtless very apparent to the reader that these areas are by no means discrete; for purposes of convenience for the user we have separated into five areas what are essentially overlapping and interdependent behaviors. We have chosen to isolate them only so that the teacher may become familiar with the most critical behaviors in each area.

As we have presumed a hierarchy of objectives within each area, so we have presumed a hierarchy among the five areas. While the relationship of Attention and Memory to the other areas is a unique one, there are interrelationships among all. We believe that the earliest levels of Gross-Motor Coordination must be mastered before the finer skills of Sensory-Motor Integration can be performed with any success. Higher levels of Visual Analysis will be dependent upon the earlier development of Gross-Motor Coordination and Sensory-Motor Integration. And higher levels of performance on all the areas must precede the mastery of many Conceptualization skills.

Those responsible for designing a curriculum area were required to present, in a comprehensive introduction to that area, basic information about the psychological foundations for the objectives and activities, and recommendations for implementation.

Because of the basic philosophy of the principal investigator, the objectives and activities for the instructional areas of Attention and Memory are included within the other four instructional areas.

The Appendices provide teachers and schools with information about the sources of materials and activities appropriate to the fulfillment of the objectives in the five instructional areas. In addition, the Appendices include an extensive bibliography of titles considered by the CREED 5 Staff to be important to the optimal functioning of a teacher working with young children.

The CREED 5 Staff consider all sections of the Curriculum to be critical elements of an integrated whole. The Curriculum cannot be implemented "piece-meal." The General Introduction, General Assumptions and Objectives, each of the five instructional areas with their introductions, and the Appendices -- each section adds to the development of both a competent child and a competent teacher. (We present in the Appendix of this report the General Objectives of the CREED 5 Curriculum.)

D. The Implementation of the CREED 5 Curriculum

While it was the goal of the CREED 5 Staff to make the curriculum both psychologically sound and educationally practicable, it is only potentially so. In our observation and evaluation of instructional programs, we have become aware of certain elements common to those that are most successful. We consider the following to be among the most critical for successful implementation of any program:

1) the active involvement of paraprofessionals in the instruction of children in a class;

2) the ongoing planning and evaluation of instructional programs for children through the cooperation, collaboration and interaction of a team, consisting of teacher, paraprofessional and supervisor;

3) the individualization of instruction through the systematic observation of the child's performance, diagnosis of his program and the development of experiences appropriate to his needs.

1. <u>The active involvement of paraprofessionals in the instruction of children</u>.

Ten years ago, the introduction of assistants for classroom teachers would have been opposed as strongly by the teachers themselves as by their administrators. Although economic considerations dictated their entrance into education, both teachers and administrators now fully appreciate the importance of the role of the paraprofessional to the functioning of the school, the class, the teacher and the child. The teacher aide, when her services are used appropriately, can help the teacher transform a classroom from a place where children lose their unique identity, where objectives appropriate to their individual abilities and disabilities are subbordinated to objectives appropriate to a conglomerate group, to a place where each child's singular profile of strengths and weaknesses is carefully considered, where instructional objectives are designed to meet his specific needs. If we genuinely accept the philosophy of individual differences, then we must accept the responsibility for selecting individual programs of instruction to meet the needs dictated by such differences. To expect that one teacher will be able to individualize instruction for a group of children is, at best, to be misinformed, at worst, it is to court failure for both teacher and child.

Any curriculum can be used in ways other than as a resource for the selection and design of individual programs of instruction; for the optimal education of the children for whom the CREED 5 Curriculum was constructed, however, the objectives and activities contained within it <u>must</u> be matched to the levels and needs of individuals. Thus, it is expected that the active involvement of teacher aides will be an important element in the appropriate implementation of the Curriculum.

2. <u>The continuous, ongoing planning and evaluation of instructional programs through the cooperation, collaboration and interaction of a team consisting of teacher, paraprofessional and supervisor</u>.

It has become increasingly clear that no instructional program, including the CREED 5 Curriculum, can be successimplemented by a teacher in isolation from her colleagues. If one studies carefully the successful team teaching and open classroom approaches, one becomes immediately aware of the systematic and intensive interaction of all teachers and supervisors involved in these programs. While the

mythology of the inviolability of the teacher and her class behind the closed door dies hard, once teachers and supervisors experience the support, the insight, and the professional growth produced through such interaction, they are unwilling to function without it.

It should be apparent that the seminars described here are something other than the traditional "grade-level" meetings, at which supervisors dictate and teachers listen with varying degrees of apathy and hostility. To be of any value, these seminars must be genuinely collaborative, with teachers, teacher-aides, and supervisors all encouraged to consider and solve the problems generated by implementation of a new program. The tasks of such seminars may range from the consideration of a new book in child development helpful to the appropriate implementation of the program, to the selection from the program of a set of objectives and activities to meet the disabilities of an individual child, as determined by the observations of his teacher, teacher-aide and supervisor.

These seminars are not the impracticable idea of an educational psychologist musing in the confines of her ivory tower; early in the trial phase of the CREED 5 Curriculum project, the participating teachers and supervisors recognized the need for such meetings independent of any recommendation by members of the CREED 5 Curriculum Staff.

The systematic consideration of all phases of the implementation of any curriculum (including the CREED 5 Curriculum,) through the cooperative interaction of all those involved in it, is considered a critical element in its successful implementation.

3. The individualization of instruction through the systematic observation of the child's performance, the diagnosis of his abilities and disabilities, and the development of experiences appropriate to his needs.

The CREED 5 Curriculum is the culmination of a five-year project directed toward the improvement of the education of the young deaf child with special learning disabilities. Unfortunately, the construction and dissemination of a curriculum, however superior, does not insure its impact on the well-being of an individual child. The way in which it is implemented in the life space of the child determines the level of its effectiveness in changing the history of his education. A curriculum may always be implemented in ways other than those recommended; some may

improve upon the original; some may well be inimical to the expectations and goals set by its designers. We set forth here the processes by which we believe that this curriculum should be introduced into the life of a child.

(a) We believe that teaching must be a process of hypothesis derivation and hypothesis testing. These decision-making responsibilities must be assumed, however, on the basis of hypotheses generated from observation of the child's behavior, diagnosis of his disabilities and abilities, and selection of objectives and activities to meet his needs. Thus, the teacher makes decisions about the child at each step of this three-step process -- and <u>each</u> step is crucial to the optimal education of the child.

(b) The first of the three -- observation of the individual child's behavior in a <u>variation</u> of activities -- is basic to the others. Unfortunately, few teachers design opportunities in their school day for such observations; yet, without direct observation of the child as he performs on tasks demanding different abilities, the teacher instructs him with only a minimal amount of the information necessary. During the three and a half years of our work with teachers involved in the CREED project, they repeated again and again that their expectations for their children's performance on testing tasks and curriculum tasks were, in many cases, not fulfilled. In some cases, the child's performance far exceeded the teacher's expectation; she had no idea that he was capable of succeeding on certain tasks. On the other hand, some teachers overestimated a child's ability, finding that he failed repeatedly on tasks they had assumed were within his repertoire of skills. In either case, the teacher's assumptions and presumptions would have resulted in the development of "mis-matched" educational experience for the child.

Careful observation of the child in <u>all</u> stages of his attempts to master a task can provide a wealth of information for the teacher's future use in developing instructional experiences. Educational psychologists specializing in all areas of instruction - reading, mathematics, psycholinguistics - are urging teachers, more specifically, to observe the child's <u>errors</u> in the performance of a task. His errors are a demonstration by the child of his process of hypothesis testing, as he develops a plan for mastering the task. Therefore, the teacher can learn a great deal about a child from the errors he makes in working at any task. Errors should not be viewed as dismal failure, but as a positive attempt on

the part of the child to relate to the elements of the task set before him. We view the CREED 5 Curriculum as both instructional and diagnostic; task mastery will aid the child in the process of perceptual-cognitive development. In addition, as he moves to mastery his errors will help the teacher to refine her knowledge of his needs.

When the teacher assigns tasks to the group or the individual, he must observe each child as he engages in the process of learning and in the solution of the tasks set before him; if he does not take the opportunity to observe the child as an individual, then he will not have a firm basis for diagnosis of the child's abilities and disabilities.

In our reports on the earlier CREED projects i.e., CREED 3 Report, 1969, we have often criticized the use of one-hour testing sessions by a psychologist as a basis for the diagnosis and remediation of a child with special learning disabilities. We would be less than candid if we did not criticize equally strongly the diagnosis and remediation of the problems of the child with special learning disabilities by teachers who have seen him perform as an individual on only a few limited occasions, and on only a few tasks, all similar in range and nature.

The child should also be observed as an individual as he performs in a group. The differences found in his cognitive, affective and social behavior in group situations, as compared with one-to-one situations, should be carefully studied. From such observations, it should be possible to develop a description of the child's unique range of behavior.

(c) Observation by teachers, teacher-aides and supervisors should provide a firm basis for the generation of hypotheses about the child's abilities and disabilities. The most valuable descriptions of the child's abilities and disabilities, may well be those arrived at through meetings of a team of teachers, teacher-aides and supervisors, all of whom have kept themselves well-informed by taking advantage of the services available to them. At such meetings the group should not only describe the child's abilities and disabilities at different points in time, but should also develop hypotheses about alternative instructional techniques and materials that will meet his needs.

The hypotheses that are formulated at such meetings, however, must be generated by informed personnel; those responsible for the education of children must be as assiduous about increasing their professional knowledge and skill as are other professionals. There is much that would be of great value to education in the new and exciting research in educational psychology, developmental psychology, perceptual psychology, physiology and medicine. Unfortunately, these results take years to reach educators. School personnel must find some means of keeping themselves informed; there must be channels of communication with other disciplines.

Current dissemination facilities of the Department of Health, Education and Welfare, such as ERIC and Research Relating to Children, should help educators to capitalize upon research in allied fields, implementing whatever might be of benefit to their children.

(d) It is at the point at which the team designs experiences to meet an individual child's needs that the way in which a curriculum is used becomes of critical importance. The team must consider carefully the level of functioning of the child in the areas covered by the curriculum and "match" him with appropriate levels of curriculum objectives. In the CREED 5 Curriculum, such "matching" must be effected through a careful selection of appropriate objectives from within and among the five curriculum areas. A child must not be subjected to a lockstep presentation of the objectives in this Curriculum, nor should the objectives and activities be presented in a "testing" atmosphere where total success is expected on first trial. Indeed, it is the belief of the CREED 5 Staff that any curriculum that provides for a "lock-step" movement of a child, with little provision for individual differences makes an automaton of both pupil and teacher.

Both cognitive and affective goals may be fulfilled through the use of the objectives and activities in the Curriculum. Many of the activities can be used with small groups as well as with individuals, so that the team may plan instruction for groups where it is appropriate to the social, affective and cognitive goals under consideration.

It should be quite clear, through these recommendations, that the expectations of the CREED 5 Staff are that the educators who use the CREED 5 Curriculum will carefully select from among its areas and objectives a "match" for the well-defined needs of their children, and that they will implement the tasks fulfilling the objectives as experiences rather than tests.

E. A Sequence for Curriculum Development in the Education of the Deaf

As we have stated in the preceding pages many times, the CREED 5 Curriculum is the end product of a series of projects -- all with discrete goals, but all moving toward the final goal of a comprehensive educational program for young deaf children with special learning disabilities. We on the CREED Staff believe that we have met with a considerable amount of success in reaching both the short-term and long-term goals set for our project. We believe, too, that the process of development is one that might well recommend itself to others who enter upon the pursuit of curriculum development for deaf children, or for other special groups.

The process as we see it must include the following factors:

1. Delimitation and description of the areas to be included in the curriculum.

Whether the prospective curriculum is to be small or large scale, the goals must be clearly structured. Current work in the development of behavioral and performance objectives and in the application of systems analysis to education is a valuable source for fulfilling this requirement. Specifying the goals clearly should facilitate the fulfillment of subsequent steps in the process of curriculum development.

2. Precise description of the performance of the target population on measures of the selected objectives.

This is a basic preliminary step for all curriculum designers. If we accept our commitment to meet individual differences, then we must obtain reliable and valid measures of the extent of these differences. While subjective descriptions can provide a guideline for the determination of the level of proficiency (or deficiency) of a group in fulfilling the selected objectives, these descriptions must be supported with descriptive measures of greater precision. This is not to say that such precision cannot be obtained through means of observation and interaction as well as through the usual "standardized testing procedures"; however, there must be a standard, if not a standardized, procedure with careful structuring,

measurement and evaluation of the performance. The aim of measurement at this stage is to direct the curriculum designers to the range of performance with which they must be concerned if they are to meet the needs of the target population.

3. Collaboration of developmental and educational psychologists with educators.

Within recent years, curriculum development has become a major occupation of developmental and educational psychologists. They have taken this course as a means for implementation and trial of their theories and principles. In their application of psychology to education, psychologists offer foundations and structures essential to the construction of a successful program of instruction. Such structure is only half a program, however; to develop a practicable program, psychologists require the active collaboration of teaching personnel. Teachers, supervisors, specialists -- all must be involved in every phase of curriculum development. It is our belief that neither profession can develop a viable program in isolation of the other; the psychologist requires the practitioner to interpret his goals in the real world of the child; the practitioner requires the theoretical foundations of the psychologist to give a sound structure to his discrete methods and materials.

The means by which this collaboration is effected can take many forms; we believe that the CREED 5 Seminars were highly successful in meeting the unique goals of our project. In all candor, we must admit that such interaction is not always comfortable; while meeting as professionals with different experience and training, confrontation and disagreement must be expected, even encouraged. A successful collaboration is one that deals with the "balancing of polarities", that deals with the construction of a new path that permits the strongest of the convictions of both parties to remain in a form still recognizable. Because we believe that such interaction is crucial to the successful development of a curriculum, a detailed description of one vehicle for collaboration, the CREED 5 Seminars, is presented in Chapter II.

4. Systematic supervision of the introduction of the total program into the classroom over a reasonably long period of time,

This step should occur in two phases -- an initial short-term pilot trial, while the curriculum is at

the design stage, and a long-term evaluation over an extended period of time, with systematic measurement of its effect.

In the CREED 5 Curriculum Project, we were able to fulfill only the first phase; it is the hope of the Principal Investigator that the CREED Staff, which was so successful in past endeavors, will be provided with the opportunity to fulfill the second at some time in the not-too-distant future.

Again the first phase is very clearly described by the CREED 5 Seminar leaders in Chapter II.

At this point, we ought to state quite clearly that we do not consider a curriculum that is the product of these steps to be a "final curriculum." We do not believe that any curriculum is ever "final." There must be provision within its structure for constant modification through the continuous interaction of the educators involved in its use -- with a child, with a class, in a school. New ideas, new theories, new principles, new materials -- all must be accommodated to a curriculum if it is to truly meet every child's individual needs. We believe that the four steps described here provide a sound basis not only for the design of the basic curriculum, but also for its continuous modification and accommodation to the needs of those for whom it was developed.

Chapter II

The CREED 5 Seminars: One Approach to Collaboration

Gisa Indenbaum and Rona Kurtz

A. The Structure

The original design of the CREED 5 project had projected a series of ongoing seminars, with a representative group of supervisors and teachers playing an important role in aiding the CREED 5 Staff in developing a curriculum for the atypical deaf child. Because it had been found that teacher involvement in the development of the curriculum is essential to the successful implementation of a program, the seminars were conceptualized as a vehicle through which an open channel would be created between the researchers (CREED 5 Staff) and the practitioners (supervisors and teachers). Our role was to help facilitate the process of creating channels of communication.

As professionals with skills in group process and child development, we saw our function as two-fold:

1. We could use our group process skills to establish a trusting environment, one which would enable the participants to communicate openly and freely; and,

2. we could serve as a resource for information in principles of child development upon which the research staff was building the curriculum.

It was expected that we could clarify and amplify the foundations upon which the curriculum was based and by so doing receive richer feedback from the teachers.

Because of time and money limitations only a representative sample of teachers was involved in the seminar groups. We were not able to include the total number of teachers who would eventually try-out CREED materials. It was expected that seminar participants would share with the other teachers and supervisors in their schools what transpired in the group discussions, and that, in turn, they would share with the group the suggestions and concerns of the other teachers in their respective schools.

Anticipation and hope was that we would meet regularly and frequently in order to maximize open flow of information and establish the kinds of relationships among group members which would be most facilitating.

With this in mind we expected to meet on a weekly basis with flexible grouping of selected teachers and supervisors in the Metropolitan area of New York City (including Lexington School, St. Joseph's School, P.S. 47, St. Francis DeSales School and P.S. 158); the New York suburban area (including New York School, Mill Neck Manor School, Nassau School and Cleary School); and the Upstate New York area (including St. Mary's School, Rochester School and New York State School at Rome). However, due to a variety of demands on the time of the teachers and supervisors, on distance and different institutional structures, each with its own pressures and commitments, final schedules emerged which were a compromise effort to meet all demands. We met on a bi-monthly basis with representative groups of teachers and supervisors from the five schools for the deaf in the New York City area. Supervisors met in the morning and teachers in the afternoon, with different schools acting as hosts. There were joint meetings of teachers and supervisors from the four suburban schools on a monthly basis. There were also monthly meetings with the three upstate schools. The suburban and upstate meetings ran for a full day.

Teachers who were asked to participate in seminars by their school administrators were those who worked with children in the age range of 3 to 7. Supervisors dealing with this age range were also among those asked to participate by their administrators.

It was the responsibility of the group leaders to meet with the teachers and supervisors and to report to the CREED staff for the purposes of feedback, communication, interaction and collaboration. We, as leaders, were then liaison between the designers and the users.

The seminars were unique in that teachers and supervisors were involved not only in the final stages of practical application but at the earlier more theoretical levels as well.

B. The Content: Objectives

The initial meetings, from November through January, focused on a discussion of the theoretical assumptions upon which the curriculum was based. In essence we, as

group leaders, elaborated on the principles of child development from which the assumptions were developed. This then provided a valid base from which the group members could consider and evaluate the objectives (both general and specific) and how they met classroom needs.

All group members received a copy of all materials in advance of the seminars. They were asked to evaluate individually each of the assumptions and objectives. Then, at group meetings, we would collectively discuss the evaluations and incorporate suggested changes, additions, deletions, modifications. A forum was also provided to air any questions or concerns that arose. Thus, for instance, teachers suggested that some of the objectives did not reach down far enough for the young child. Another suggestion was that the gap between some objectives was too big and that intermediate steps were needed. At other times discussions on broad principles of educational philosophy took place, e.g., individual teaching or group teaching, free exploration of material vs. more structured teacher directed methods.

There were suggested changes in language to make the Curriculum more in keeping with the vernacular of the teachers. In general, teachers tended to bring us down from our more theoretical, sometimes too abstract level; at the same time they attempted to incorporate the more theoretical implications into their practice. Participants wanted to know about children in general--their fears, how they relate to others, their cognitive capabilities? There were many questions about the parallel development of hearing and deaf children. They considered whether teachers of the deaf have unrealistic and inappropriate expectations for their students, and how a normally hearing three-year-old would behave in a given situation.

Much discussion centered around the expectations that teachers had of themselves in their role as teachers of the deaf as well as the things they expected of their children. Their questions were, for example, "Is a child not mastering a given skill because I, the teacher, have not been able to reach him or is he not mastering the task because of his developmental stage?"

In general, the teachers felt that this phase of the seminars was especially difficult for them because they were asked to focus on theoretical aspects when their daily pressures demanded practical solutions.

C. The Content: Activities

During the second phase of the seminars (February and March) group members were asked to study the objectives once again from the standpoint of suggesting activities for fulfilling specific objectives. Such activities were those that teachers had used with success with certain children in their classes or activities they had read in the literature. These activities would supplement those designed by the CREED staff.

In this stage we began to use tape recorders in order to capture all the details and flavor of the teachers' descriptions of their own techniques for our reports to the Curriculum design staff.

While there were many valuable ideas and creative suggestions which they did share, many of the participants found this an uncomfortable and burdensome task because they were not convinced that their own methods were sufficiently novel or valuable beyond the needs of their own children.

1. In general, during this phase, discussions again centered around their concern with implementation.

2. They provided a forum for airing these concerns and enabled participants to be supportive of each other and to share strategies for solving some of their difficulties.

3. Teachers expressed a need for explicit instruction on how to motivate children, on everyday classroom management, and on handling handicapped children with very sever problems.

D. The Content: Pilot Trial

The pilot trial of Curriculum elements was introduced by a Workshop for <u>all</u> participants, including seminar members. The enormous amount of materials and activities that had been accumulated for the fulfillment of curriculum objectives was on display. They were arranged according to content areas and in sequence coinciding with the Curriculum objectives. From the exploration of these materials and an interchange with the entire CREED 5 Staff, participating teachers and supervisors gained an overall sense of the working copy of the Curriculum in its entirety.

After the Workshop, parts of the Curriculum were distributed to selected schools for the last phase of the evaluation--a pilot trial within the classroom. Teachers were assigned selected objectives and given the appropriate materials designed to lead to their fulfillment. They were

asked to evaluate the effectiveness of the materials and procedures in fulfillment of the objectives in use in their classroom.

Teachers were also requested to modify the activities when necessary to meet the special problems of individual children. They were urged to implement their own ideas in novel ways of using the materials to fulfill the objectives.

The seminar time was used to share experiences with the materials, to suggest modifications, and to have procedural questions answered. In the use of materials unforeseen situations arose, the discussion of which provided valuable feedback. For instance, commercially made materials were sometimes found inadequate because instructions were unclear; some materials, although adequate in meeting content objectives, were criticized for their impracticality in terms of expense, storage or complexity.

It became clear to many teachers that the Curriculum was truly developmental in nature and that at times they were unable to complete assigned tasks because their children were at earlier developmental stages.

There was general excitement about the final Curriculum and much time was spent in discussing its future use in classrooms. Final format of the finished Curriculum, illustrations, photographs, work sheets, etc., were suggested by teachers and supervisors. Participants expressed a need for an "evaluation form," or "progress report," for use with each child. Rough guidelines for these were worked out in seminar.

Seminar participants reported that their colleagues who had not participated in the seminars raised many questions about the use and evaluation of the materials. Seminar participants found that they had a better grasp of the underlying principles and were therefore able to use the materials in freer, more creative and adaptive fashion. They were also able to help their co-workers by bringing to them information gathered at the seminars. They strongly urged future workshops as crucial to the successful implementation of the Curriculum. Because they believed that for many atypical children the acquisition of new skills is a slow process, they urged that only after working with the Curriculum for an extended period of time should a more sophisticated evaluation be made.

In addition, the accuracy of the developmental sequence of the Curriculum whould be assessed. Since a curriculum is a living, changing process, rather than a finished product, it was strongly suggested that there by a follow-up project.

E. Evaluation

When we were approached about participating in this project we were very excited because it brought together two of our main interests: group processes and child development. In addition, we believed strongly in inclusion of teachers in the planning stages of a curriculum. We saw that the final product of the project, the CREED 5 Curriculum, would be the result of a truly cooperative enterprise with input from many disciplines. Since it is our belief, however, that a group cannot form a cooperative, cohesive, productive unit without the opportunity to express feelings and attitudes when these are present among group members, we envisioned our early meetings as focusing on the establishment of group cohesiveness through the exploration of our own reactions and interactions, in an atmosphere of increasing openness and trust.

The necessity of meeting deadlines and scheduling difficulties, however, resulted in a curtailment of meetings and necessitated a shift in the focus of seminars. The content became more narrowly focused in the various aspects of the Curriculum, greatly minimizing attention to group interaction.

In addition, as in other groups, we found that for maximum involvement and participation one must have voluntary commitment to membership in a group. Assigned attendance does not really work. Because of the nature of the research project, group members were assigned to seminars by virtue of the age group they were teaching, thus largely negating the principle of voluntary attendance.

It also became apparent that while we all shared the common commitment of providing input to the Curriculum, many group members did not share a similar belief in the importance of an examination of group interaction as a means toward that final goal. To the extent that we did not have the opportunity to work out, to the mutual satisfaction of everyone, an acceptable compromise, the productivity and potential richness of the seminars fell somewhat short of our initial very high expectations, which include the development of greater sensitivity and awareness of participants toward themselves and others,

leading to an enrichment of the learning-teaching climate in the classroom.

While all these factors impinged on all four of the seminar groups, nevertheless, each group had a very different climate. Those groups meeting on a full day basis seemed to have an advantage although they met less frequently (about once a month). Because we had bigger chunks of time the groups were able to focus first on the members' professional needs, concerns and questions, and then still had time to deal with the task at hand. The full day meetings also provided more opportunities for group cohesion to form. Shared lunches made a great difference in climate. Members were able to communicate informally, to share experiences and get better acquainted with the staffs of other schools. When members came back to the formal group setting, there was a carryover from the closer ties formed over these informal exchanges at lunch.

In contrast, groups meeting on a half-day basis were constantly operating under a more pressured climate and had greater difficulty resolving group differences. There was much greater difficulty in arriving at a satisfactory balance between the task of evaluation of the Curriculum and other professional concerns. In essence, the all-day groups seemed to have a sense of getting their needs met as well as giving to the research project, and were therefore able to contribute more freely. On the other hand, the half-day groups had more of a sense of being pressured and were less able to focus on the task at hand.

Despite these limitations, the groups were quite productive in making substantial contributions to the final Curriculum. Furthermore, seminar members felt sufficiently involved and motivated to want to continue meeting with each other and strongly recommended the continuation of the CREED project. As mentioned previously they recommended follow-up evaluations, study groups and workshops for experienced as well as new teachers. At the very minimum they wanted to have meeting time set aside at their annual State conventions to share informally their experiences with the Curriculum.

In conclusion, we believe that a high level of success in such teacher seminars may be expected if consideration is given to the following factors:

1. Pursuit of both affective and task goals

It becomes important to understand that a group is a special entity--and not merely a "sum of its parts." The process of group interaction is a direct function of its qualities and its nature. These qualities are built from the permutations and combinations of the individual elements within a group and, thus, quite unpredictable. Therefore, the affective level of group interaction must be recognized in the pursuit of the task goal. These affective processes are there--whether the group directs attention to them or not, so that the task goal will be influenced by them. Feelings can not - should not be ignored. Consideration of their influence on the interaction in a teacher seminar, may well provide further insights into their influence in pupil-teacher interaction.

2. Voluntary attendance

It is our belief that if we want to deal with both affective and task goals, voluntary participation is a necessity.

3. Sufficient periods of time to pursue all goals

While the many demands upon a teacher's time leave only limited periods for such group meetings, the commitment to the goals of such group meetings must not be made without serious consideration by both school administrators and teachers about providing sufficient periods of time for the fulfillment of these goals.

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APPENDIX A

Figure 1

Rating Scale

The objectives are to be rated on four levels. In your evaluation, you are asked to respond to four questions, for each of the General Objectives. We have placed the questions in the frame which appears on the next page, so that it will be more convenient for you to refer to them as needed.

Your responses will be analyzed by the Curriculum staff and used as the basis for modification of the objectives so that they:

--are easily comprehended by other teachers (Questions I and II)

--are made appropriate for different age groups (Question III)

--are implemented in the final Curriculum with sufficient activities for mastery (Questions II, III, IV)

In addition to your ratings, we request that you include comments specific to an item next to that item, and make general comments on separate sheets of paper.

Rating Scale

EVALUATION QUESTIONS

I. Is the objective presented so that you are able to understand what the child is expected to master?

Yes, Clear ☐ Not clear ☐

II. Do you agree that there is an important relationship between this objective and future academic activities?

/Important/ Somewhat important/ Not important/

III: Teachers:
Do you think that this objective would be helpful in achieving the educational goals you have set for the age range of the children in your class?

/Helpful/ Somewhat helpful/ Not helpful/

Supervisors:
Do you think this objective would be helpful in achieving the educational goals you have set for the age range of the children under your supervision?

/Helpful/ Somewhat helpful/ Not helpful/

IV. Are you satisfied with the materials and activities you are now using to fulfill this educational objective?

Yes satisfied ☐ Not satisfied ☐

Supervisor _____ Age range of children under your supervision _____

Teacher _____ Age range of class _____

Table 1

General Assumptions and Objectives - Ratings by Teachers and Supervisors (N = 30)

Objectives	I Clarity of Expressing		II Importance to Education			III Helpful to Teacher			IV Satisfied Current Facilities	
	Clear	Not Clear	Important	Somewhat Important	Not Imp.	Helpful	Somewhat Helpful	Not Help.	Satisfied	Not Sat.
A. Assumptions										
1. All children move through same sequence of development	26	1	21	3	0	27	2	0	13	8
2. Special deaf children require deliberate structuring of the environment	27	0	25	2	0	24	3	0	15	8
3. Special deaf children must be helped to adapt to changes and to act independently	24	1	27	0	0	24	1	0	17	8
4. Nature of the interaction of teachers with special deaf children is critical	26	0	27	0	0	26	0	0	22	2
5. Cognitive learning must be a basis for remotivation through success	26	0	26	0	0	26	0	0	17	6
6. Wide range of differences in affective and cognitive behavior must be recognized	25	1	25	0	0	25	0	0	13	9
B. Objectives										
1. Skill development through hierarchial sequencing	25	1	25	0	0	24	0	0	15	6
2. Independent activity in performance of tasks	25	0	25	0	0	24	0	0	16	6
3. Recognition of unique cognitive and affective needs	26	0	24	0	0	23	1	0	16	4
4. Enhancement of self-image through mastery of tasks	25	0	25	0	0	24	0	0	15	3

Table 2

Conceptualization Objectives - Ratings by Teachers and Supervisors (N = 30)

Objectives	I Clarity of Expressing		II Importance to Education			III Helpful to Teacher			IV Satisfied Current Facilities	
	Clear	Not Clear	Important	Somewhat important	Not Imp.	Helpful	Somewhat Helpful	Not Help.	Satisfied	Not Sat.
1. Serial Ordering	27	3	29	1	0	27	3	0	9	20
2. Classification	29	1	29	1	0	27	3	0	14	14
3. Symbolization, coding	23	7	24	3	0	20	6	0	12	16
4. Structuring space	26	4	29	0	0	22	6	1	11	16
5. Logical foundations of number	30	0	29	1	0	25	4	1	14	14
6. Logical sequence across time	28	1	27	2	0	24	4	0	13	13

Table 3

Attention & Memory Objectives - Ratings by Teachers and Supervisors (N=30)

Objectives	I Clarity of Expressing		II Importance to Education			III Helpful to Teacher			IV Satisfied Current Facilities	
	Clear	Not Clear	Important	Somewhat Important	Not Imp.	Helpful	Somewhat Helpful	Not Help.	Satisfied	Not Sat.
Teacher's Role										
1. Learning situation	24	3	24	0	0	26	2	0	11	12
2. Learning strategies	26	2	27	0	0	26	1	0	11	7
3. Structure	27	1	27	1	0	26	2	0	11	9
Task Factors										
4. Length of presentation	24	3	27	1	0	26	1	0	9	9
5. Sensory systems	27	1	27	0	0	26	1	0	10	9
6. Number of units	27	1	25	1	0	24	2	0	12	9
7. Level of representation	28	0	26	1	0	25	2	0	11	8
8. Ordering of recall	27	1	26	1	0	24	2	0	12	7
9. Methods of recall	25	3	22	0	0	21	2	0	11	8
10. Level of activity	24	1	23	0	0	22	0	0	12	5

Table 4

Visual Analysis - Ratings by Teachers and Supervisors (N = 30)

Objectives	I Clarity of Expressing		II Importance to Education			III Helpful to Teacher			IV Satisfied Current Facilities	
	Clear	Not Clear	Important	Somewhat Important	Not Imp.	Helpful	Somewhat Helpful	Not Help.	Satisfied	Not Sat.
1. Match 3 dim. objectives	30	0	28	2	0	28	2	0	21	8
2. Match 3 dim. objectives with 2 dim. objectives	30	0	28	2	0	27	3	0	20	8
3. Match dim. objectives	30	0	26	2	0	26	3	0	17	12
4. To reproduce 3 dim. model	25	5	20	7	0	19	8	1	14	13
5. To match colors	30	0	25	4	1	25	3	1	20	7
6. To match positive with negative forms	17	12	25	2	1	25	4	0	15	12
7. To match Kinesthetic perception with visual perception	23	5	17	4	3	20	3	2	13	10
8. To match sets of pictures	30	0	26	2	1	26	3	0	15	13
9. To locate imbedded figures	22	5	20	8	1	17	8	1	7	17
10. To match printed forms	26	3	26	1	1	23	3	1	13	11
11. To match sets of printed forms	28	1	22	4	1	20	5	2	13	9
12. To match outlines with their printed forms	27	3	23	5	1	21	6	1	17	8
13. To locate symbols in an array	27	2	23	1	4	22	3	4	18	5

Table 5

Sensory Motor Integration - Ratings by Teachers and Supervisors (N=30)

Objectives	I Clarity of Expressing		II Importance to Education			III Helpful to Teacher			IV Satisfied Current Facilitie	
	Clear	Not Clear	Important	Somewhat Important	Not Imp.	Helpful	Somewhat Helpful	Not Help.	Satisfied	Not Sat.
1. Manual strength, minimal vision	29	1	27	3	0	25	4	1	21	5
2. Coordination of eyes with one hand	30	0	28	1	0	28	1	0	21	5
3. Coordination of eyes, both hands	30	0	28	0	0	29	0	0	20	7
4. Use of tool to pick up and place object	30	0	27	1	1	25	3	1	18	9
5. Sustain a rhythmical activity with two arms	29	0	25	2	1	24	3	1	20	6
6. Sustain a rhythmical activity with one arm	30	0	24	4	0	25	3	0	20	7
7. Sustain rhythmical movement, integration of two arms	29	0	26	3	0	27	2	0	21	6
8. Awareness of body boundaries	30	0	28	1	0	27	2	0	22	4
9. Tactile-kinesthetic awareness of body with tactile stimulation	29	0	25	4	1	26	4	0	20	6
10. Tactile-kinesthetic awareness of body with visual stimulation	29	0	27	3	0	26	4	0	22	5
11. Awareness of spatial relation of body parts	29	0	27	2	0	25	4	0	18	8
12. To hold and manipulate specific tools	30	0	28	2	0	28	2	0	22	5
13. To manipulate a tool within a template	28	1	23	3	1	21	6	0	19	7
14. To manipulate a tool to fill in an area	28	2	25	1	0	22	4	0	20	3
15. To manipulate a tool between lines	30	0	22	7	1	20	7	2	24	3
16. To span a space graphically with a tool	25	5	24	3	0	21	6	0	17	6
17. To manipulate a tool around a template	24	4	20	3	2	18	6	1	17	5
18. To manipulate a tool in tracing	29	1	22	4	2	22	4	2	22	4
19. To reproduce a drawing	29	0	25	3	0	22	3	2	24	2

Table 6

Gross Motor Coordination - Ratings by Teachers and Supervisors (N = 29)

Objectives	I Clarity of Expressing		II Importance to Education			III Helpful to Teacher			IV Satisfied Current Facilities	
	Clear	Not Clear	Important	Somewhat Important	Not Imp.	Helpful	Somewhat Helpful	Not Help.	Satisfied	Not Sat.
1. Bilateral motor acts	26	0	24	2	0	21	4	0	19	1
2. Unilateral motor acts	26	0	22	3	0	22	3	1	19	5
3. Integrated lateral motor acts	25	0	25	1	0	22	4	0	20	3
4. Bilateral eye-hand coordination	26	0	25	0	0	24	2	0	18	5
5. Unilateral eye-hand coordination	24	0	23	1	0	22	1	0	16	3
6. Integrated eye-hand coordination	23	0	22	1	0	19	5	0	17	2

APPENDIX B

CREED 5 CURRICULUM

GENERAL OBJECTIVES IN FIVE SUBJECT AREAS

1. Attention and Memory

For the teacher:

General Objective I: To present materials or events that the child is expected to remember clearly apart from other materials and events.

General Objective II: To provide the child with experience in the grouping of events and materials to increase his success in remembering them.

General Objective III:To provide a carefully developed structure for all materials and events the child is to remember.

General Objective IV: To provide a model for the child with which to compare his completed task.

For the child: ATTENTION

General Objective I: To focus on one distinct feature of one object.

General Objective II: To scan by systematically focussing on more than one distinct feature.

General Objective III: To sustain attention for increasing periods of time.

For the child: MEMORY

General Objective I: To develop the ability to remember material and events after a long exposure (for more than 5 seconds). To develop the ability to remember material and events after a short exposure (for less than 5 seconds).

General Objective II: To develop the ability to remember materials and events that are presented visually. To develop the ability to remember a tactile-kinesthetic stimulus. To develop the ability to remember an auditory stimulus. To develop the ability to remember a stimulus through a sense modality other than that through which it was presented.

General Objective III: To develop the ability to remember 2 or 3 objects or events. To develop the ability to remember 4, 5, 6 or 7 objects or events.

General Objective IV: To develop the ability to remember objects and events in his environment. To develop the ability to remember pictures of materials, events, geometric shapes or colors. To develop the ability to remember abstract symbols (letters, digits, mathematical notations or nonsense forms). To develop the ability to remember materials or events at a level of representation other than the one in which it was presented.

General Objective V: To develop the ability to remember a collection of materials or events in any order. To develop the ability to remember a collection of materials or events in a sequence.

General Objective VI: To develop the ability to remember by recognition. To develop the ability to remember through reproduction.

General Objective VII: To develop the ability to remember events through gross-motor involvement; e.g., to reproduce a series of actions performed. To develop the ability to remember objects or events through perceptual motor involvement; e.g., to remember a group of objects through manipulation of these objects.

2. Visual Analysis:

General Objective I: To develop the ability to match a single three-dimensional object with another three-dimensional object.

General Objective II: To develop the ability to match colors.

General Objective III: To develop the ability to match two-dimensional representations; photographs, drawings and figures.

General Objective IV: To develop the ability to match a three-dimensional object with a two-dimensional representation of that object.

General Objective V: To develop the ability to assemble a three-dimensional model from three-dimensional materials.

General Objective VI: To develop the ability to match a positive form with its matching negative.

General Objective VII: To develop the correspondence between a tactile perception of an object and its visual representation.

General Objective VIII: To develop the ability to locate embedded figures.

General Objective IX: To develop the ability to match printed forms.

General Objective X: To develop the ability to match printed representations with their outlines.

General Objective XI: To develop the ability to duplicate the spatial organization of shapes and symbols.

3. Conceptualization

General Objective I: To develop the ability to see similarities between objects and to classify on the basis of such similarities.

General Objective II: To develop understanding of principles of serial ordering.

General Objective III: To develop the ability to interpret and use different ways of representing, coding and symbolizing objects, actions and events.

General Objective IV: To develop the ability to structure space, and to understand and use spatial concepts.

General Objective V: To acquire understanding of logical sequence across time.

General Objective VI: To develop the logical foundations necessary for comprehension of concepts of number and measurement.

4. Sensory Motor Integration

General Objective I: To develop manual strength and dexerity with minimal use of vision.

General Objective II: To develop the ability to coordinate the use of the of the eyes and one hand in performing manipulative tasks.

General Objective III: To develop the ability to coordinate the use of the eyes and the integrated use of both hands.

General Objective IV: To develop the ability to utilize a tool to pick up and place objects.

General Objective V: To develop the ability to sustain a rhythmical movement.

General Objective VI: To develop an awareness of the body boundaries in relation to external objects.

General Objective VII: To develop tactile-kinesthetic awareness of the body.

General Objective VIII: To develop the awareness of the spatial relationship of body parts.

General Objective IX: To learn to hold and manipulate broad point and fine point tools.

General Objective X: To develop the ability to manipulate a tool within a template to produce an unbroken line.

General Objective XI: To develop the ability to manipulate a tool to fill in a designated area.

General Objective XII: To develop the ability to manipulate a tool to draw a line between two lines.

General Objective XIII: To develop the ability to draw a line between two points to connect them.

General Objective XIV: To develop the ability to manipulate a tool around the outside of a template to produce an unbroken line.

General Objective XV: To develop the ability to manipulate a tool on top of (tracing) a previously drawn line.

General Objective XVI: To develop the ability to reproduce drawings and symbols from a model.

5. Gross Motor

General Objective I: To develop the ability to perform bilateral motor acts smoothly, with proper body alignment and control.

General Objective II: To develop the ability to perform unilateral motor acts smoothly with proper body alignment and control.

General Objective III: To develop the ability to perform integrated (cross) lateral motor acts smoothly with proper body alignment and control.

General Objective IV: To develop the ability to perform bilateral eye-hand coordination activities smoothly and with control.

General Objective V: To develop the ability to perform unilateral eye-hand coordination activities smoothly and with control with the preferred hand.